

#### IV. Remarks

Reconsideration and allowance of the subject application are respectfully requested.

Claims 61-64 are pending in the application. Claim 61 is independent.

Applicants have added new Claims 61-64 to afford themselves a scope of protection commensurate with the disclosure. The new claims are fully supported in the specification, are directed to the elected invention, and are believed to be allowable for the reasons to be developed below.

The specification has been amended to insert the reference to the claim to priority. No new matter has been added.

The Drawings have been corrected to overcome the objection thereto.

The cancellation of Claims 1-60 will moot the rejections under 35 USC §§ 101, 102, and 112, second paragraph. Applicants respectfully submit that the newly-added claims are fully patentable over Keefer (U.S. Patent No. 6,451,095). In particular, independent Claim 1 recites a novel combination of structure and/or function whereby a gas separation system includes a stator having a first stator valve surface, a second stator valve surface, and a plurality of function compartments opening into the stator valve surfaces. A rotor is rotatably coupled to the stator,

and includes a first rotor valve surface, a second rotor valve surface in communication with the second stator valve surface, and a plurality of rotor flow paths for receiving adsorbent material therein for preferentially adsorbing a first gas component in response to increasing pressure in the rotor flow paths in comparison to a second gas component. Each rotor flow path includes a pair of opposite ends opening into the rotor valve surfaces for communication with the function compartments. A split stream centrifugal compressor has a casing and is coupled to a portion of the function compartments. The split stream centrifugal compressor includes (i) a gas inlet for receiving the feed gas mixture, (ii) an impeller disposed within the casing and configured to impart kinetic energy to the feed gas mixture to form an ejected gas flow, (iii) a volute defined between the casing and the impeller for receiving the ejected gas flow, and (iv) at least two diffusers in communication with the volute for receiving the gas flow from the volute and extending tangentially from the pump casing. One of the at least two diffusers is configured to discharge a boundary layer flow from the gas flow delivered by the volute.

Keefer discloses A rotary module for implementing a high frequency pressure swing adsorption process comprises a stator and a rotor rotatably coupled to the stator. The stator includes a first stator valve surface, a second stator valve surface, a

plurality of first function compartments opening into the first stator valve surface, and a plurality of second function compartments opening into the second stator valve surface. The rotor includes a first rotor valve surface in communication with the first stator valve surface, a second rotor valve surface in communication with the second stator valve surface, and a plurality of flow paths for receiving adsorbent material therein. Each flow path includes a pair of opposite ends, and a plurality of apertures provided in the rotor valve surfaces and in communication with the flow path ends and the function ports for cyclically exposing each said flow path to a plurality of discrete pressure levels between the upper and lower pressures for maintaining uniform gas flow through the first and second function compartments. However, Keefer fails to disclose or suggest a combination of features including a split stream centrifugal compressor having a casing and coupled to a portion of the function compartments, wherein the split stream centrifugal compressor includes (i) a gas inlet for receiving the feed gas mixture, (ii) an impeller disposed within the casing and configured to impart kinetic energy to the feed gas mixture to form an ejected gas flow, (iii) a volute defined between the casing and the impeller for receiving the ejected gas flow, and (iv) at least two diffusers in communication with the volute for receiving the gas flow from the volute and extending tangentially from the pump casing. One of the at least two diffusers is configured to

discharge a boundary layer flow from the gas flow delivered by the volute.

Accordingly, the salient claimed features of the present invention are nowhere disclosed or suggested by the cited art.

In view of the above amendments and remarks, it is believed that this application is now in condition for allowance, and a Notice thereof is respectfully requested.

Applicants' undersigned attorney may be reached in our Washington, D.C. office by telephone at (202) 625-3500. All correspondence should continue to be directed to our address given below.

Respectfully submitted,

  
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Appendix

Annotated Sheet Showing The Change of Incorrect Reference Number 314  
to Correct Reference Number 214



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Fig. 5

